

# The Influence of Cartoon Character Advertising on Fruit and Vegetable Preferences of 9- to 11-Year-Old Children

Nandita Bezbaruah, PhD; Ardith Brunt, PhD, RD

## ABSTRACT

**Objective:** The aim of the present study is to determine the influence of cartoon characters in preferences of fruit and vegetables among children.

**Methods:** A 10-item survey was used in this cross-sectional study to determine the factors that influence a child's likelihood of eating fruits and vegetables. Seven factors influencing consumption of fruits and vegetables were rank ordered by 218 third- and fourth-grade students.

**Results:** Results indicated that the child was more likely to eat fruits or vegetables if they tasted good, followed by whether they were nutritious. Presence of a cartoon character on the label ranked 6 of 7. Sex does not affect the rank order of factors that influence intake of fruits or vegetables.

**Conclusions and Implications:** Future interventions aimed at increasing consumption of fruits and vegetables should take into consideration such factors that influence intake.

**Key Words:** fruit and vegetable intake, cartoon characters, sex differences, children, preferences (*J Nutr Educ Behav.* 2012;44:438-441.)

## INTRODUCTION

In general, fruit and vegetables are low-calorie, nutrient-dense foods and are considered part of a healthful diet. Fruit and vegetables are also a good source of vitamin C, beta carotene, potassium, folate, and fiber.

Despite many health benefits, intake of fruits and vegetables among children and adolescents in the United States remains below the recommended level.<sup>1-5</sup> According to the 2010 Dietary Guidelines for Americans, the recommended intake is 1.5 cups of fruit and 2.5 cups of vegetables per day for a reference 1,800-calorie diet for children aged 9 to 13 years.<sup>6</sup> Fewer than 25% of boys and girls aged 9 to 12 years consumed 5 or more servings of fruit and vegetables per day.<sup>7</sup> Girls tend to have higher intake of fruits and vegetables than boys.<sup>8</sup> Increasing fruit and vegetable consumption among children is important because dietary patterns formed during childhood can be tracked into adulthood.<sup>9</sup>

Children's food habits are shaped by several factors, including food availability to children and modeling of food behaviors by parents/guardians.<sup>10</sup> Children's food preferences also change with age. As children grow older, they tend to try new foods compared with younger children.<sup>11</sup> Taste attributes are more prominent among children aged 11 to 12 years.<sup>12</sup> Accessibility and preferences have also been strongly associated with intake of fruits and vegetables.<sup>1,4,5</sup>

Food advertising and marketing play a major role in influencing eating behaviors of children and youths.<sup>13-16</sup> The Institute of Medicine, in its review of studies, found that television advertising influences food and beverage preferences and purchase requests among children aged 2 to 11 years.<sup>14</sup> Marketing that targets children has gone beyond television. Marketing approaches have become varied and multifaceted. The use of cartoon characters to market products has become prevalent; however, few studies have specifically identified

and ranked factors such as knowledge, advertising, psychological factors, and sensory perceptions that children of different ages consider important when choosing fruit and vegetables.

The purpose of this study was to determine the influence of cartoon characters in the preferences of fruit and vegetables among children. Examining the factors that influence intake of fruits and vegetables from the child's perspective may provide insight into a child's decision-making processes. This would be helpful so that interventions can be developed that are relevant and useful to improve consumption of fruits and vegetables.

## METHODS

### Study Procedure

After adaption of a previously validated questionnaire,<sup>17</sup> the survey was pretested with 8 third- and fourth-grade children of a nonparticipating school. After feedback and some modifications, the survey was finalized for the study. The study participants were third- and fourth-grade students from 4 schools randomly selected from the 8 elementary schools within a Midwest school district. The survey packets, consisting of the survey and consent forms, were distributed by the teachers. The students

---

Department of Health, Nutrition and Exercise Sciences, North Dakota State University, Fargo, ND

Address for correspondence: Ardith Brunt, PhD, RD, Department of Health, Nutrition and Exercise Sciences, North Dakota State University, Box 6050, Fargo, ND 58108-6050; Phone: (701) 231-7475; Fax: (701) 231-7453; E-mail: [ardith.brunt@ndsu.edu](mailto:ardith.brunt@ndsu.edu)

©2012 SOCIETY FOR NUTRITION EDUCATION AND BEHAVIOR

doi:10.1016/j.jneb.2011.03.139

returned the completed surveys to the school, along with the signed parental permission and child assent forms. Participation in the study was voluntary; however, each student who returned the survey packet to school (either complete or incomplete) received a sticker. The returned survey forms were collected by the investigator from the study schools. The study was approved by the university institutional review board and the school district.

A 10-item survey (Supplementary Data) assessed student preferences for consuming fruits and vegetables, availability within the home, and likelihood of parental purchase of fruit and vegetables. Two questions, 1 for fruit and 1 for vegetables, were used to determine factors that influenced a child's likelihood of eating fruits and vegetables. The children ranked 7 possible factors that influenced their preferences: 1 was the most important and 7 was the least important. The options on the lists were (1) one that tastes good, (2) one that has a picture of a cartoon character, (3) one that is good for them (nutrition), (4) one that they have never tasted before (new), (5) one that looks good (appearance), (6) one that smells good, and (7) other factors.

### Data Analysis

The factors that influence intake of fruits and vegetables of children were analyzed by using SPSS (version 17.0, SPSS, Inc, Chicago, IL, 2009). The Kendall W test was used to determine ranking of factors that influence children's intake of fruits and vegetables. Independent-samples *t* tests were used to determine the difference between sexes and grade levels on rankings of factors influencing intake of fruits and vegetables. Level of significance was set at  $P \leq .05$ .

### RESULTS

The study consisted of 218 children: 102 boys and 116 girls. As seen in the Table, the percentage of girls was slightly higher (53%) than that of boys (47%). The majority (74%) of the study participants were in fourth grade and white (90%). Survey responses of students in third and

**Table.** Demographic Characteristics of the Respondents

Characteristics	n	(%)
Sex		
Male	102	(47)
Female	116	(53)
Grade level		
3rd grade	57	(26)
4th grade	161	(74)
Race		
White	197	(90)
Non-white	21	(10)

fourth grade, aged 9 to 11 years, were used to measure the factors that children identified as influencing their consumption of fruits and vegetables.

### Ranking of Factors That Influence Intake

Overall, one that tastes good was ranked as the leading factor for intake of both fruits and vegetables (Figure), followed by one that is viewed by the child as nutritious for both fruit and vegetables. Appearance and smell ranked 3 and 4 for both fruit and vegetables, respectively. For fruit, the Kendall coefficient of concordance was 0.46, which is approximately midway between complete agreement

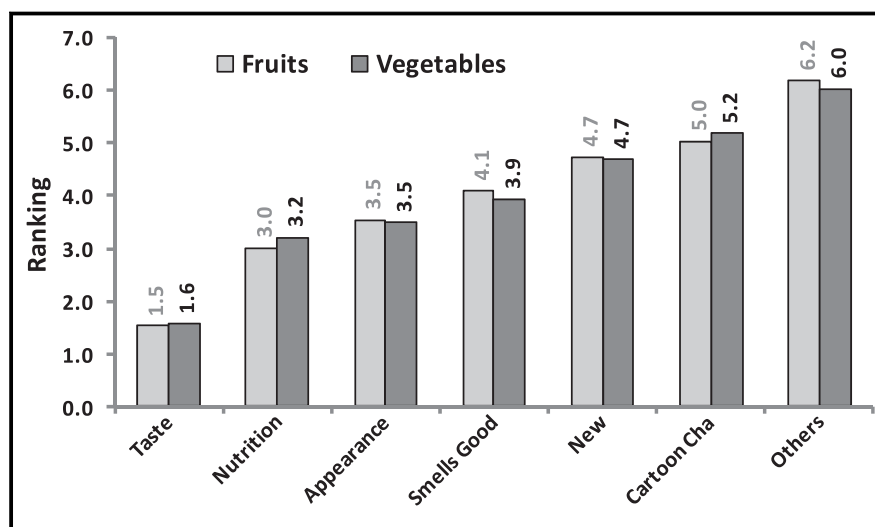
and no agreement among various factors that influence ranking of factors. In regard to vegetables, the Kendall coefficient of concordance was 0.43, which is also nearly midway between complete agreement and no agreement among the various factors.

### Sex and Factors Influencing Intake of Fruits and Vegetables

Results from independent-samples *t* tests showed no significant differences between sexes on factors influencing intake of fruits or vegetables. Taste was the leading factor among both boys and girls for consumption of both fruits and vegetables, followed by nutrition and appearance.

### Grade Level and Factors Influencing Intake of Fruits and Vegetables

Ranking of preferences for selecting fruit and vegetables by grade level was completed with the Kendall W test. The top 3 factors for fruit and vegetables for both grades were taste, nutrition, and appearance. The Kendall coefficient of concordance for ranking for fruit was 0.46; for vegetables, 0.43. This result indicated a fairly strong agreement between the ranking of factors for fruit and vegetables for both grade levels. With the



**Figure.** Ranking of factors that influence intake of fruits and vegetables by children, with the lowest number being the most influential. New indicates that children prefer tasting fruit and vegetables they have not tasted before; cartoon cha, cartoon character.

Download English Version:

<https://daneshyari.com/en/article/361442>

Download Persian Version:

<https://daneshyari.com/article/361442>

[Daneshyari.com](https://daneshyari.com)